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ABSTRACT

This pilot study sought to establish validity of a teacher career development model based on results from previous research which had isolated a series of career stages and several characteristics of each stage. The model was constructed to identify characteristics associated with effective and ineffective transfer of knowledge from teacher to students. Perceptions of principals and teachers regarding 160 characteristics of teachers identified 4 distinct career stages: Provisional, Development, Transition, and Decelerating, each with associated characteristics which made logical sense and appeared to corroborate previous findings of research involving principals. Findings support the need for teacher renewal; the model suggests a framework for matching staff development activities to the classroom and the career stage of the teacher. The appendixes provides a proposed model for instructional development and the survey form listing the 160 teacher characteristics. (JD)

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A Measure of Common Variables Associated with Career Stages as Perceived by Principals and Teachers: Validation of a Model for Career Development

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Purpose

The purpose of this pilot study was to establish validity of a career development model. Perceptions of principals and perceptions of teachers toward teaching characteristics associated with teachers performance in different stages of career development were investigated. A refinement of a three-stage professional growth model independently suggested by related research was effected.

Related Literature

Several authors have indicated that teachers experience specific stages of professional growth during their career (Glickman (1980), Lee (1983), Spivey (1976), and Watts (1980). Each of these individuals suggested three stages of professional growth experienced in the teaching profession. Although identified by different names, stages were associated with similar characteristics, but have not been confirmed through empirical research. Agreement as to the nature of these three stages served as a philosophical approach to career development.

The present research of DeMoulin and Guyton utilized an empirical approach to ascertain the number and nature of stages in career development. Preliminary analysis of principals' perceptions in a previous study isolated a series of career stages and several characteristics used as descriptors for each stage. The descriptors and career stages were compatible with a career development model (Appendix A). This model was constructed to identify characteristics associated with effective

and ineffective transfer of knowledge from teachers to students. The stages were identified as Provisional, Development, Transition, and Decelerating to correspond with descriptors in each stage established through Principal Component Factor Analysis.

An inference of Royer and Feldman (1984) was that one of the most basic qualities of teaching was the ability to transfer knowledge to the students. This technique had to be flexible and adaptable to specific needs.

Emphasis on research-based methods of teaching needed to be applied to staff development activities. Just as cognitive levels of students have been of major importance in the classroom teacher's lesson planning, career stages should be of equal concern in planning staff development activities. Once career stages have been identified through research, appropriate staff development activities that are most effective can be designed. A four-stage model of staff development activities would be customized to both the goals of the school system and the development stage of the individual teacher.

This approach was designed to identify common characteristics, needs, and interests relative to a teacher's stage of career development. Staff development must be intricately designed to provide the best possible program to increase teaching effectiveness. Small or large groups of teachers with common needs and interests would be administered appropriate staff development activities, thus individualizing staff

development around career stages.

The need for teacher renewal activities that enhanced the quality of teaching was hardly unknown. Past research has suggested the importance of tailoring staff development activities to the needs and interests of teachers (DeMoulin (1988), Doyle (1977), Fuller (1969), Hunter (1988), and Sistrunk (1987). These activities must be identified to advance the goals of the district and set the stage to encourage faculty involvement. If staff development activities were not related to the classroom and career stage of the teacher, the effect of such activities were minimal.

In order to fully individualize staff development, teaching characteristics and career development must be investigated to identify effective and ineffective teaching methodology. The most extensive study to date was conducted by David Ryans. In his analysis, Ryans (1960) suggested that teachers improved their level of effectiveness, reaching a plateau until age 50. At this point a relatively quick drop in teaching effectiveness was observed.

This approach may have been appropriate during the time of the study; however, changing times and technologies have added more pressures to the classroom teacher than were previously felt three decades ago. It has been considered that added pressures in the schools' environment has left the teachers vulnerable to increased stress. The dynamics of our society and increased public demands have resulted in adverse classroom and school

conditions. These conditions have led to increased emotional and physical disabilities among teachers.

To address these concerns, a further refinement of Ryans' theory was developed. DeMoulin and Guyton (1987) suggested that teachers expanded their level of effectiveness to a culmination point independent of age: then, barring any rejuvenation practices, declined to a level of ineffectiveness. Further, this decline often happened before age 50 and possibly much earlier in most teachers' career. One or a combination of the following reasons were responsible:

1. Negative experience(s) during the first few years;
2. Incorrectly choosing teaching as a career, thus affecting motivation and job satisfaction;
3. Extreme burnout caused by prolonged stress inside and/or outside the educational environment.

Treatment of Data

Factor analysis was the statistical technique used to analyze the number and nature of stages and descriptors. The 160 items were subjected to Principal Component Factor Analysis to determine significant number and nature of variables in the separate career stages. The Statistical Package for Social Science (SPSS) program handled a maximum of 100 items. The instrument of 160 items was split into two parts and two separate Principal Component Analyses were ran. As prescribed by Cooley and Lohnes (1971), judgments were made for the clustered items to

be retained in each factor. Such judgments were based on rotated loadings of at least .30 in strength. Items loading to .30 were subjected to orthogonal rotation to produce a factor matrix.

Data to answer the impact of variables between and within groups in this study was subjected to Factorial Analysis of Variance. Item means of principals and teachers were analyzed to find if significant differences in mean perceptions between and within each factor existed. Factorial Analysis of Variance would also determine the presence of any significant interaction of variables.

Results

The data were analyzed to determine if principals and teachers identified common stages of career development and teaching characteristics used as descriptors for each stage. In the preliminary analysis, approximately seven factors and items loading to each of these factors were investigated. Items of each of the two separate analysis which loaded as much as .30 were isolated and identified with in the first seven factors. This analysis yielded factored items which were combined into a new Principal Component Factor Analysis under orthogonal rotation. The number of factors was restricted first to five factors then to four to secure optimum loading. The analysis with four factors appeared to load satisfactory, and the variables contributing to each of the factors described clusters that made logical sense in terms of the career model

being investigated. Data being reported in this analysis was based on the four factors derived from orthogonal rotation.

After these factors were identified and described, a frequency analysis was done for each of the items within each set of factored variables. This analysis was to determine the level of career development to which the subjects had indicated the variable to be. The mode was then determined for the frequency levels, i. e., if the subject felt that a particular item characterized a beginning teacher, a scale was characterized by the number "1".

The reduction to four factors produced preliminary clusters that described certain levels of career development, but appeared not to be sequential according to the proposed model. An average of the modal measurements for each stage produced career levels that were sequential in nature and logically described an association for distinct separation of stages. From this procedure the derived factors were associated with the career development model.

Forty-five percent of the original 160 items were able to be factored by the principals in a previous study. Teachers were able to factor an additional 18 percent. Consequently, thirty-seven percent of the original items were not able to be factored by principals or teachers.

According to the DeMoulin and Guyton four-stage career development theory, each stage, Provisional, Development,

Transition, and Decelerating, represented effective and ineffective methods of transferring knowledge from teachers to students. Stages were logically identified and named according to descriptors of content characteristics.

Provisional and Development stages represented effective methods of transferring knowledge, hence teachers appeared to identify more with these characteristics. Conversely, Transition and Decelerating Stages represented increasingly ineffective methods of transferring knowledge, hence principals appeared to be able to identify more with the ineffective characteristics of teachers.

It appeared that principals were accustomed to evaluative practices and therefore were more familiar with identifying ineffective characteristics of teacher performance that may need attention. This overall analysis appeared to corroborate traditional role of teachers and principals.

Although items factored separately by principal and teacher perceptions were of relative importance, the major concern of this study was to identify common items of in stage development. Principals and teachers were able to commonly identify 26.8 percent of the items.

Tables 1 - 4 represent common descriptors of teaching characteristics as perceived by principals and teachers. Overall means and standard deviations are also provided in these tables. (Item descriptors are identified in Appendix B)

Table 1

Common Descriptors to Factor 1

Item Descriptors	Mean Scores Principals	Teachers	Standard Deviation Principals	Teachers
3	1.291	1.268	.651	.918
20	1.641	1.445	.592	1.131
30	2.505	3.525	1.737	1.103
32	1.893	1.680	.938	.842
45	2.330	2.882	.797	1.576
46	2.165	1.742	.830	.492
91	1.601	2.661	.507	1.417
107	2.340	2.290	1.176	1.818
110	2.039	2.227	.989	.916
137	1.738	1.354	1.365	.783
147	1.748	1.921	.458	1.220
150	2.340	2.766	.996	1.068

Table 2

Common Descriptors to Factor 2

Item Descriptor	Mean Scores Principals	Teachers	Standard Deviation Principals	Teachers
1	2.476	3.415	.861	.747
23	2.184	2.816	.837	.751
39	2.524	2.852	.739	.625
40	2.165	2.142	.830	.792
57	2.777	2.765	1.176	.759
62	2.602	2.585	.953	1.121
70	2.738	2.854	.840	1.139
73	2.495	2.503	.884	.683
117	2.903	3.246	.716	1.326
120	2.670	2.439	.833	.719
121	2.604	2.801	.812	1.463
127	2.495	2.964	1.010	.838
136	2.709	2.810	1.106	1.121
157	2.816	2.920	.947	.716

Table 3

Common Descriptors to Factor 3

Item Descriptor	Mean Scores Principals	Teachers	Standard Deviation Principals	Teachers
17	2.427	4.317	1.418	1.774
26	4.126	2.137	.637	1.654
27	4.223	4.084	.980	1.823
43	3.039	2.995	1.468	.668
51	4.019	3.060	.700	1.639
75	4.427	4.854	.914	.856
116	2.903	3.418	1.801	.925
149	3.728	4.106	1.270	1.437

Table 4

Common Descriptors to Factor 4

Item Descriptor	Mean Scores		Standard Deviation	
	Principals	Teachers	Principals	Teachers
2	4.223	3.213	1.865	1.789
34	4.350	4.939	.782	2.760
37	4.330	4.667	1.581	.569
49	4.117	4.317	.582	1.488
77	4.311	3.916	1.146	1.911
93	4.010	4.927	1.048	2.146
125	3.903	3.108	1.419	1.966
142	3.998	3.754	.859	1.204
146	3.942	4.822	1.588	1.418

Analysis of Tables 1 - 4 indicated a larger number of items were commonly factored for the Provisional and Development stages when compared to common items factored for the Transition and Decelerating stages. This analysis appeared to follow traditional "accentuate the positive" viewpoints in education. Data suggested that principal and teachers were able to factor a greater number of characteristics representing effective teaching when compared to the number of characteristics representing ineffective teaching. Further, principals and teachers appeared to demonstrate a relationship of teaching characteristics to career development. The common identification of four factors were represented by common descriptors within each stage that made logical sense.

Factorial Analysis of Variance was utilized as the statistical technique to identify significant differences within each factor, between factors, and the presence of any significant interaction. A .05 confidence level was used for testing statistical significance associated with these analyses. Results of the Factorial Analysis of Variance are reported in Table 5.

The Homogeneity of Variance assumption appeared to be violated so a non-parametric Rank-Order procedure was utilized for comparison. Results are presented in Table 6.

Both the parametric and non-parametric procedures of statistical analysis produced compatible results in the final analysis. Therefore, the final results of Factorial Analysis of Variance were not affected by Homogeneity of Variance.

Table 5

Parametric Analysis of Between and Within Factors

Source	SS	df	MS	F-ratio
Between Factors (A)	54.351	3	18.117	63.223 *
Within Factors (B)	0.359	1	0.359	1.252
A x B	0.137	3	0.046	$F < 1$
Residual	22.352	78	0.287	

* $P \leq .05$

Table 6

Non-Parametric Analysis of Between and Within Factors

Source	SS	df	MS	F-ratio
Between Factors (A)	36,722.784	3	12,240.928	62.098 *
Within Factors (B)	562.791	1	562.791	2.855
A x B	332.952	3	110.984	$F < 1$
Residual	15,375.474	78	197.121	

* $P \leq .05$

Item means for principals and teachers between and within factors were analyzed for significant relationships. Analysis indicated significant F-ratios (F = 63.223 for parametric and F = 62.098 for non-parametric) between factors at the .05 level of confidence. Further analysis indicated no significant F-ratios (F = 1.252 for parametric and F = 2.855 for non-parametric) for within factor analysis. Finally, no significant F-ratios (F < 1 for both parametric and non-parametric) was observed for the presence of any interaction of variables at the .05 level of significance.

As a means of differentiating between factor differences, a Scheffe' Post-Hoc test was performed. Table 7 shows a summary of contrasts tested by the Scheffe' test.

Table 7

Summary of Scheffe' Contrasts for Between Factor Comparison

Source	df	MS	F-ratio
Contrast 1	1	5.195	18.645 *
Contrast 2	1	23.391	83.949 *
Contrast 3	1	45.499	163.296 *
Contrast 4	1	8.748	31.395 *
Contrast 5	1	23.650	84.879 *
Contrast 6	1	2.491	8.940 *
Residual	79	0.279	

* P ≤ .05

A significant difference was noticed between each contrast. This analysis appears to indicate that each of the four factors as identified by principals and teachers were independent of one another and suggests four distinct and separate stages of career development.

Discussion

The results obtained by applying Principal Component Factor Analysis to the original 160 items and Factorial Analysis of Variance to the means between and within each factor revealed the following information:

1. Four distinct and separate factors and common items appeared to be identified by principal and teacher perceptions;

2. A comparison of means of principals and teachers revealed a significant difference in mean perceptions of item descriptors between each factor. Analysis indicated independency of factors;

3. A comparison of item means of principal and teacher perceptions revealed a non-significant difference within each factor. Analysis indicated the descriptors were correctly located in factors and corroborated the Factor Analysis loading.

An overall analysis suggested that principals and teachers in this pilot study were able to commonly identify four distinct stages of career development. Item descriptors within each stage appeared to support common stage identification as suggested by non-significant differences and absence of any significant interaction. Further, a significant difference between factors

supported by the Scheffe' Post-Hoc test indicated independency of factors and supported the identification of four factors derived from Principal Component Factor Analysis.

The findings of this pilot study indicated that principals and teachers in the Mid-South Education Service Region appeared to identify four independent stages of career development. Common teaching characteristics that loaded to each factor appeared to describe sequential stage development that made logical sense, and appeared to corroborate previous findings with principals.

The impact of the statistical procedures isolated a previously unidentified fourth stage of career development. This stage, identified as "Transition" from stage descriptors, indicated further refinement of stage characteristics imperative to effectively individualize staff development programs.

Results of the pilot study appeared to justify the following conclusions concerning the impact of the statistical analyses:

1. Although principals and teachers were able to factor four independent stages and descriptors, more characteristics of effective teaching were commonly identified when compared to characteristics of ineffective teaching;

2. Through empirical research, apparent agreement of four independent stages and descriptors of logical expression increased the probability for a fourth stage of career development and indicated added validity to DeMoulin and Guyton's four-stage career development theory.

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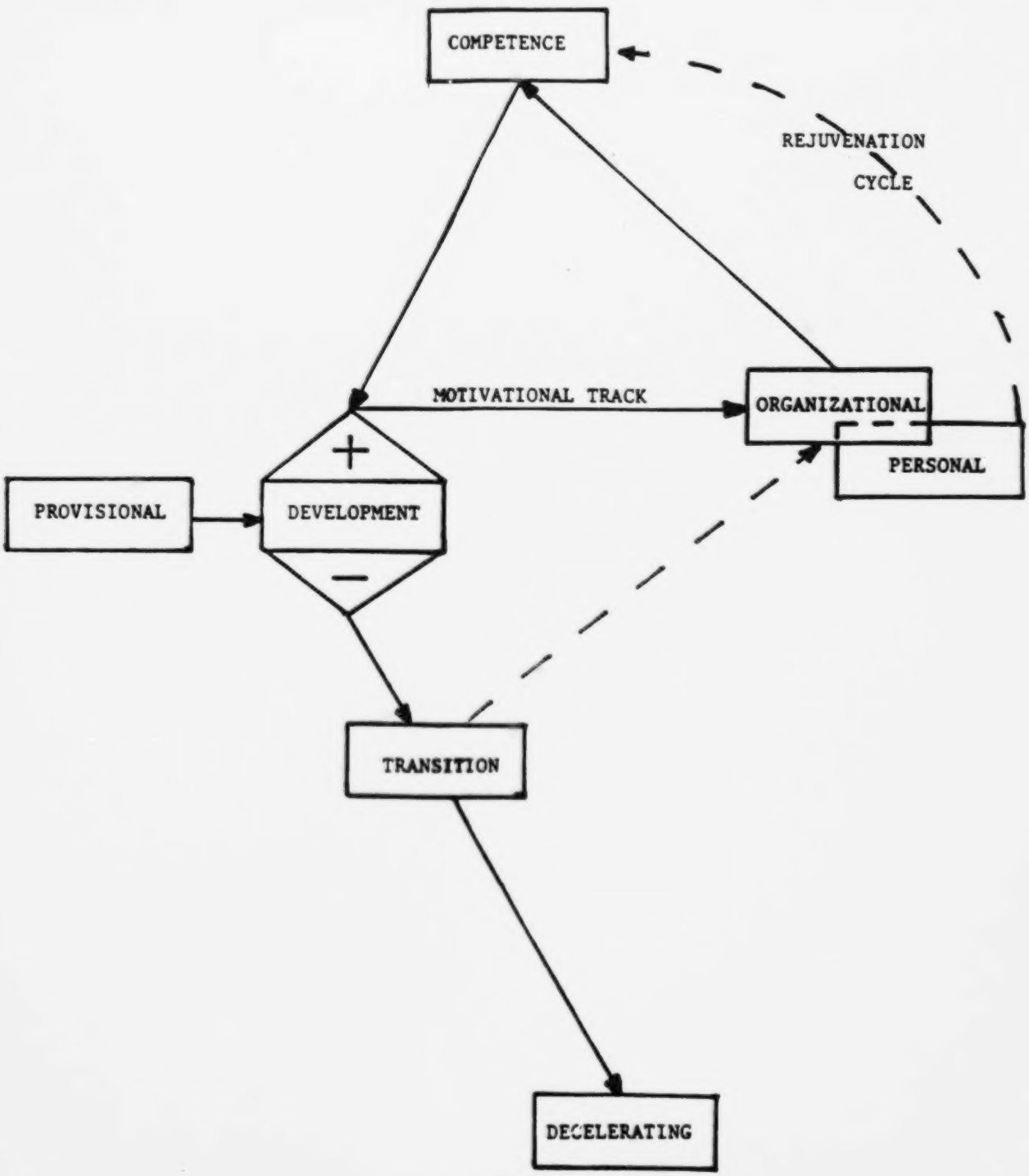
Appendix A

Proposed Model For Instructional Development



APPENDIX B (cont.)

STAGES

A - 1st YEAR TEACHER
B - 5TH YEAR TEACHER
C - 10TH YEAR TEACHER
D - 20TH YEAR TEACHER
E - 30TH YEAR TEACHER

CHARACTERISTICS

_____ 1. problem-solving techniques in classroom
_____ 2. does not challenge student ability
_____ 3. energetic
_____ 4. eager
_____ 5. effective classroom management practices
_____ 6. less instructional creativity
_____ 7. few motivational factors for job completion
_____ 8. no vision development
_____ 9. ignorant to change in educational issues
_____ 10. association with a new profession
_____ 11. trying to prove worthiness as an educator
_____ 12. focussing and expanding a chosen method of instruction
_____ 13. few personal development practices
_____ 14. no teacher/learner design
_____ 15. lack of classroom communication
_____ 16. little professional interest
_____ 17. focussing on immediate goals
_____ 18. generic educational offering
_____ 19. high teacher self-efficacy
_____ 20. confidence in teaching ability
_____ 21. use of trial and error to find the best instructional method
_____ 22. creative in utilizing appropriate classroom management techniques
_____ 23. self-motivation
_____ 24. personal satisfaction
_____ 25. ability to interpret and apply long- and short-term organizational goals to student success
_____ 26. decline in job satisfaction
_____ 27. little subject matter development
_____ 28. survival mode in living from paycheck to paycheck
_____ 29. robotic instruction involving a day to day function in a limited dimension
_____ 30. continually updating materials and methods
_____ 31. nervous of unfamiliar, structured environment
_____ 32. demonstrates the ability to accept constructive criticism for professional development
_____ 33. time monitor in becoming an 8:00 to 3:30 person
_____ 34. classroom material unchanged from year to year
_____ 35. lack of descriptive content in lectures
_____ 36. decrease in criteria development
_____ 37. gives little time before or after school
_____ 38. "volunteer syndrome"
_____ 39. organized in the use of efficient time-management skills

APPENDIX B (cont.)

STAGES

A - 1ST YEAR TEACHER
B - 5TH YEAR TEACHER
C - 10TH YEAR TEACHER
D - 20TH YEAR TEACHER
E - 30TH YEAR TEACHER

CHARACTERISTICS (cont.)

_____ 40. personal direction
_____ 41. repetitious style of instructional delivery
_____ 42. decline in instructional enthusiasm
_____ 43. little emphasis on class projects, activities, or programs
_____ 44. minimal measure of student output
_____ 45. personal improvement
_____ 46. job satisfaction
_____ 47. decrease in subject matter content
_____ 48. a watered-down instructional offering
_____ 49. decline in self-improvement practices
_____ 50. emotional instability
_____ 51. less motivation
_____ 52. routine instructional practices
_____ 53. decrease in the evaluation of students' progress
_____ 54. personal self-efficacy evaluation
_____ 55. unfamiliar with professional expectations
_____ 56. effective self-renewal practices
_____ 57. teacher effectiveness in classroom
_____ 58. businesslike classroom behavior
_____ 59. constant student achievement
_____ 60. poor attitude towards student success
_____ 61. learning-centered environment
_____ 62. conscientious of effectiveness
_____ 63. self-enhancing practices
_____ 64. student-centered environment
_____ 65. responsible for own actions
_____ 66. emotional adjustment
_____ 67. stimulating classroom structure
_____ 68. authoritarian classroom behavior
_____ 69. respectful to students' opinions
_____ 70. effective self-evaluation skills
_____ 71. dominant figure
_____ 72. democratic classroom behavior
_____ 73. favorable attitude towards students
_____ 74. discipline oriented
_____ 75. non-participant in staff development practices
_____ 76. emphasis on group-centered learning
_____ 77. high absenteeism
_____ 78. separation from administration
_____ 79. large state university graduate

APPENDIX B (cont.)

STAGES

A - 1ST YEAR TEACHER
B - 5TH YEAR TEACHER
C - 10TH YEAR TEACHER
D - 20TH YEAR TEACHER
E - 30TH YEAR TEACHER

CHARACTERISTICS (cont.)

_____ 80. imaginative classroom behavior
_____ 81. advanced college credits
_____ 82. professional awareness
_____ 83. low self-esteem
_____ 84. private university graduate
_____ 85. outside interests
_____ 86. introvert
_____ 87. small state university graduate
_____ 88. professional affiliations
_____ 89. traditional educational viewpoints
_____ 90. community involvement
_____ 91. lack of emphasis on methodology
_____ 92. liberal arts graduate
_____ 93. negative attitude towards students
_____ 94. progressive
_____ 95. state college graduate
_____ 96. egocentric
_____ 97. aggressive behavior
_____ 98. overt behaviors
_____ 99. restricted teacher behavior
_____ 100. high assessment of ability
_____ 101. ineffective classroom atmosphere
_____ 102. independent
_____ 103. frequently absent
_____ 104. subject-matter preparation
_____ 105. disruptive classroom environment
_____ 106. low organizational interest
_____ 107. little outside activity
_____ 108. friendly, outgoing
_____ 109. low assessment of ability
_____ 110. high attendance rate
_____ 111. impartial in decision making
_____ 112. consistent assessment in classroom observations
_____ 113. low levels in understanding child psychology
_____ 114. develops school classwork around 'out of school' activities
_____ 115. strong, personal ambition
_____ 116. fails to maintain a systematic and orderly approach to work
_____ 117. teacher/student learning relationship
_____ 118. deductive approach to education
_____ 119. uniformly low assessments in classroom observations

APPENDIX B (cont.)

STAGES

A - 1ST YEAR TEACHER
B - 5TH YEAR TEACHER
C - 10TH YEAR TEACHER
D - 20TH YEAR TEACHER
E - 30TH YEAR TEACHER

CHARACTERISTICS (cont.)

_____ 120. allows student/student learning relationships
_____ 121. individual initiative
_____ 122. does not associate with change
_____ 123. unmarried
_____ 124. low emotional adjustment
_____ 125. values exactness in classroom operations
_____ 126. greater preference for non-directive classroom procedures
_____ 127. interested in student development
_____ 128. displays arrogance in job performance
_____ 129. happily married
_____ 130. more objective in decision making
_____ 131. lack of cooperation
_____ 132. stereotyped approach
_____ 133. incorrect English usage
_____ 134. inferior classroom reasoning
_____ 135. highly structured
_____ 136. promotes self-control
_____ 137. inconsistent classroom management practices
_____ 138. satisfaction of immediate goals
_____ 139. positive reinforcement of student's progress
_____ 140. armchair teaching tactics
_____ 141. generalized instructional offering
_____ 142. highly stressed
_____ 143. direct observation and assessment of ongoing student behavior
_____ 144. pessimistic of educational changes
_____ 145. unable to accept responsibility
_____ 146. burnout symptoms
_____ 147. unprepared for classroom activities
_____ 148. refusal to accept constructive criticism
_____ 149. unsympathetic with a pupil's failure at a task
_____ 150. approachable to all pupils and peers
_____ 151. negative reinforcement of students' progress
_____ 152. dominating presence
_____ 153. rational and analytical approach
_____ 154. loss of self-control skills
_____ 155. master's degree or higher
_____ 156. correct grammar usage
_____ 157. promotes good character
_____ 158. sincere
_____ 159. lack of effort in job completion
_____ 160. inductive approach to education